

Fig. 1

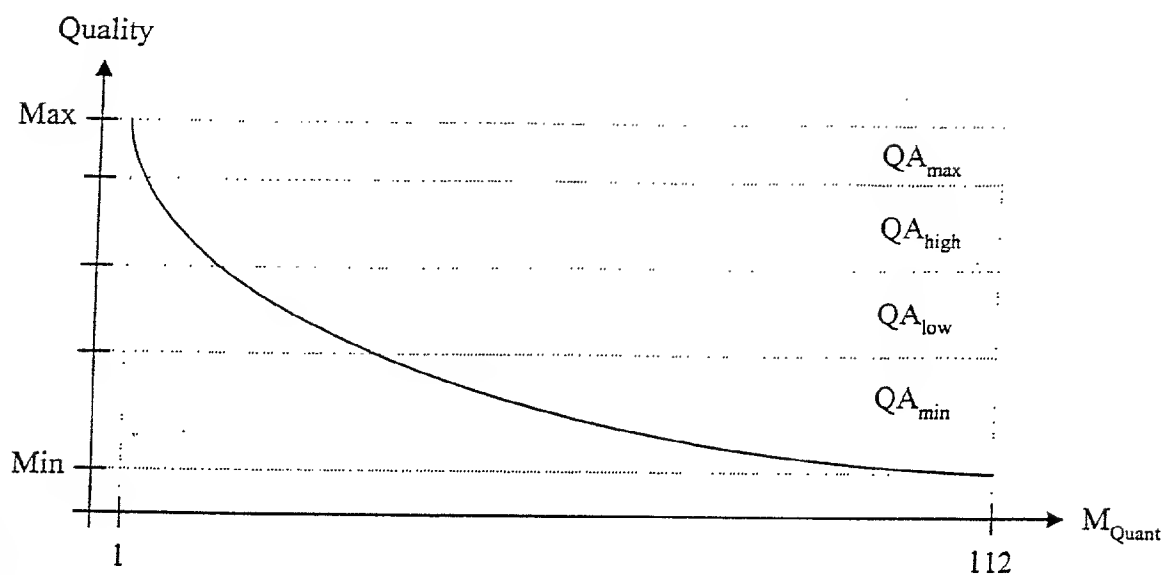


Fig. 2

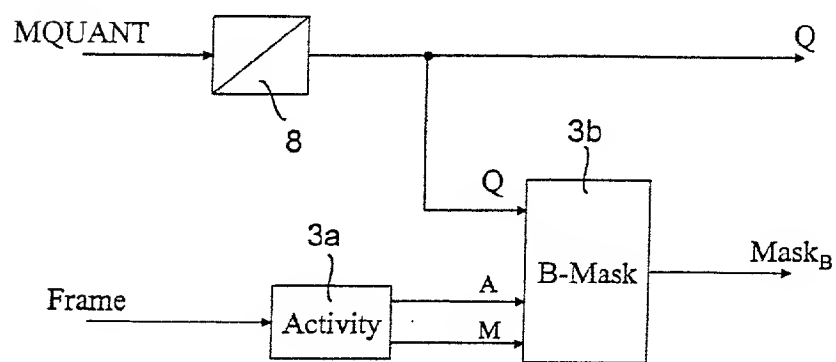


Fig. 3

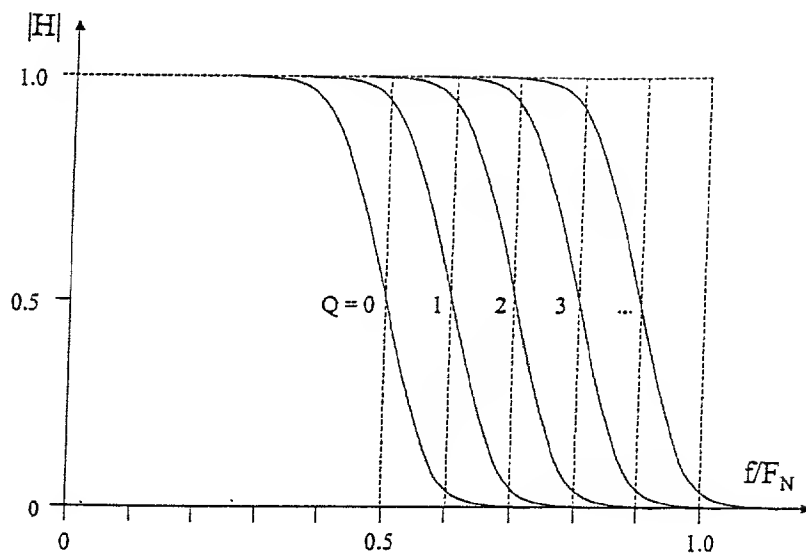


Fig. 4

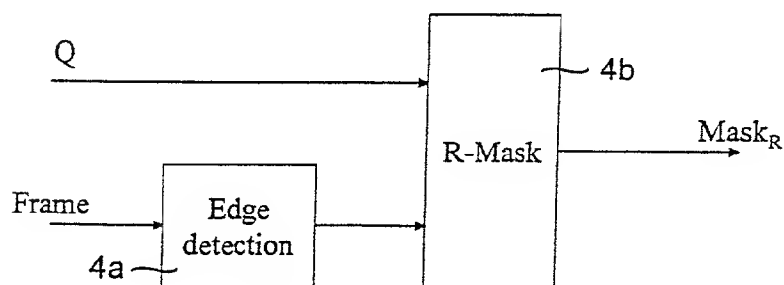


Fig. 5

for  $QA_{\min}$ ,  $QA_{\text{low}}$  and  $QA_{\text{high}}$ 

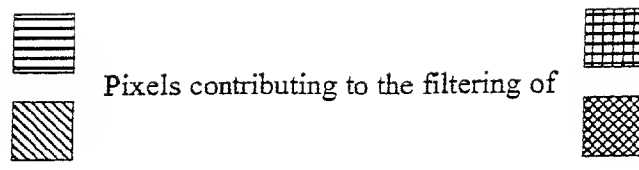
$$\text{Filter} = \begin{bmatrix} 1 & 2 & 1 \\ 2 & W & 2 \\ 1 & 2 & 1 \end{bmatrix}$$

$$W = \begin{cases} 4 & \text{; for } QA_{\min} \\ 8 & \text{; for } QA_{\text{low}} \\ 16 & \text{; for } QA_{\text{high}} \end{cases}$$

for  $QA_{\max}$ 

$$\text{Filter} = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

Fig. 6



$$F = \begin{bmatrix} f_{-1,-1} & f_{0,-1} & f_{1,-1} \\ f_{-1,0} & f_{0,0} & f_{1,0} \\ f_{-1,1} & f_{0,1} & f_{1,1} \end{bmatrix}$$

$$P_{new}[p][l] = \frac{\sum_{j=-l}^1 \sum_{i=-1}^1 P[p+i][l+j] \cdot f[i][j] \cdot \delta_r}{\sum_{j=-l}^1 \sum_{i=-1}^1 f[i][j] \cdot \delta_r}$$

with :

$$\delta_R = \begin{cases} 1 & \text{if } P[p+i][l+j] \text{ and } P[p][l] \text{ in same region} \\ 0 & \text{otherwise} \end{cases}$$

Fig. 7

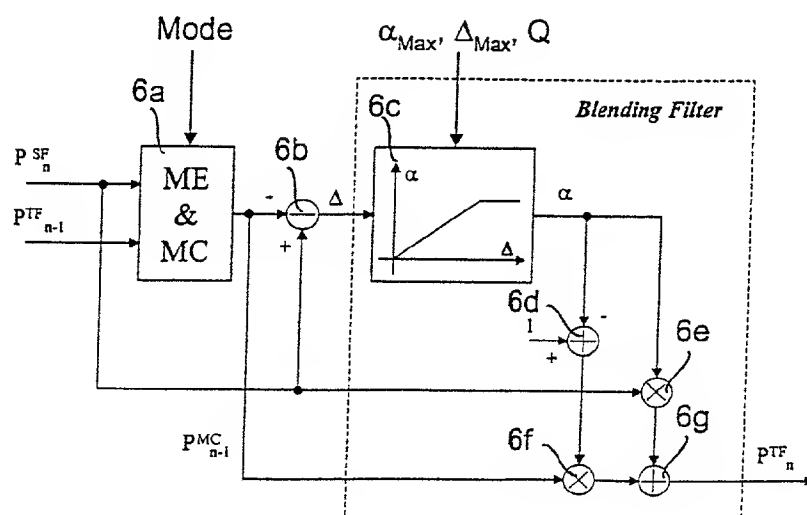


Fig. 8

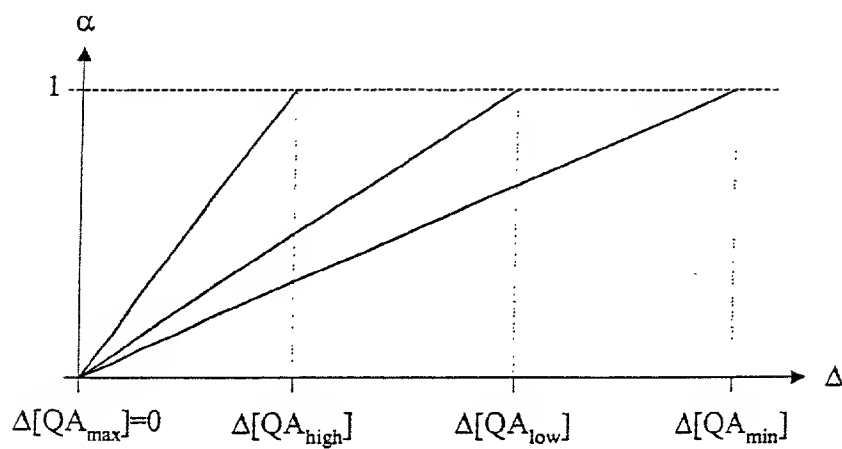


Fig. 9